

B-73: Impact of weed management practices on ant density and fruit yield in the control of pineapple wilt disease

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The wilt disease in pineapple is a major constraint to profitable pineapple production in Sri Lanka. The mealybug *Dysmicoccus brevipes* (Cockerell) either transmits a wilt virus or inject a toxic substance into the plant, while feeding. Ants play a key role in preventing predators and parasitization of the mealybugs and helps to increase the mealybug populations.

Work done in Hawaii has indicated that with the increase in ant density, the number of wilted pineapple plants increased. Thus, by keeping the ant density low, wilt could be managed.

The present study was carried out to investigate the impact of 3 farmer-weed management practices on the density of ants and the fruit yield.

Two sets of experiments were carried out at Makandura. The first was carried out in coconut land with pineapple planted as a mixed crop along with banana and lemonime. The treatment included clean weeding, slash weeding and no weeding. In the second experiment pineapple was planted as a monocrop and the 3 treatments clean, weeding, slash weeding and mulching with a coir dust carpet were applied. Using pitfall traps ant density was recorded at weekly intervals. Fruit yield was also recorded.

In the first experiment, clean weeded plots had the lowest ant density (2 - 10/trap) and highest fruit yield (3,263 kg/ha). In the slash weeded and unweeded plots, ant density was high (20 -100/trap) and fruit yield was low (2,230 kg/trap). In the second experiment, clean weeded and mulched plots had significantly lower ant density (2 - 8/trap) and higher fruit yield (12,572 & 10,020 kg/ha) respectively, while ant density was high (8 - 25/trap) and fruit yield low (3,740 kg/ha) in the slash weeded plots.

With intercrops, ant density increased and pineapple fruit yield decreased. Fruit yield is significantly higher in T1 than in T2 in both experiments.

Clean weeding in pineapple fields is recommended to keep ant density at low levels.